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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,628	11/08/2000	Sien G. Kang	18419-008210US	5772

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TOWNSEND AND TOWNSEND AND CREW, LLP  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO, CA 94111-3834

EXAMINER

RAO, SHRINIVAS H

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 02/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/710,628	KANG S.E. ET AL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Steven H. Rao	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Priod for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3,4 &amp; 5</u> . | 6) <input type="checkbox"/> Other:  |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of paper submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Continued Prosecution Application***

The request filed on 11/8/2000 for a Continued Prosecution Application (CPA) i.e. CIP (continuation –in part) under 37 CFR 1.53(d) based on parent Application No. 09/295,858, now U.S. patent No. 6,171,965 is acceptable and a CIP has been established. An action on the CIP follows.

### ***Information Disclosure Statement***

Acknowledgment is made of receipt of Applicant's Information Disclosure Statements (PTO-1449) filed on 11/08/00, 9/11/2001 and 1/15/2002.

The references on PTO 1499 submitted on 11/08/00, 9/11/2001 and 1/15/2002 are acknowledged. All the cited references have been considered. However the foreign patents and documents cited by applicant are considered to the extent that could be understood from the abstract and drawings.

All the cited references have been considered and PTO 1449s initialed and the contract employees have been instructed to mail a copy of the initialed PTO-1449s to the applicants along with the Office Action.

### ***Drawings***

Any drawing corrections requested, but not made in the prior application should be repeated in this application if such changes are still desired. If the drawings were changed and approved during the prosecution of the prior application, a petition may be filed under 37 CFR 1.182 requesting the transfer of such drawings, provided the parent application has been abandoned. However, a copy of the drawings as originally filed must be included in the 37 CFR 1.60 application papers to indicate the original content.

### ***Specification***

The disclosure is objected to because of the following informalities:

The specification/application has been reviewed to the extent necessary to determine the presence of all possible minor errors. Applicants' cooperation is required in correcting any errors of which applicant may become aware of in the specification/application.

Applicants' cooperation is appreciated to correct the numerous error in specification and claims due to a translation into English from a foreign document which contains grammatical and idiomatic errors.

Appropriate correction is required.

Claims are examined by examiner as best to understood.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. ( U.S. Patent No. 5,869,387, herein after Sato, cited by applicants' in their IDS).

With respect to claim 1, Sato describes a method of fabricating substrates including the steps of : providing a substrate comprising a film of material characterized by a non uniform surface with plurality of defects ( Sato fig. 1 A # 102, col. 7 lines 65), at least some of the roughness being 100 Angstroms or greater ( Sato col. 1 line 65 ),

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and an etching species contacting the non-uniform surface in a thermal setting to reduce a level of non-uniformity of the non-uniform surface by filling a portion of the defects to smooth the film of material, the film of material being substantially free from defects and being characterized by a surface roughness of a predetermined value. ( col. 4 lines 48-60).

With respect to claim 2, wherein the substrate is heated to  $1000^{\circ}$  or greater ( Sato col. 2 line 47- 1260 degrees or greater).

With respect to claims 3 and 4, wherein the temperature increase is 10 or 20 degrees per second or greater. ( Wolf Vol. I pages 57-58).

With respect to claims 5 and 6, wherein the particles are hydrogen bearing species derived from hydrogen gas during an implantation process. ( Sato example 2 col. 18 lines 20-35).

With respect to claims 7-9, wherein the surface roughness predetermined value is between 2- 0.1 nanometers root mean square. ( Sato claim 11, etc.).

With respect to claims 10-11, wherein the etching species includes a hydrogen, halogen bearing compounds like Chlorine, HCl, HBr, HI and HF. ( Embodiment 2, col. 8 lines 56-col. 11 line 39).

With respect to claims 12-13, wherein the etching process comprises a fluorine bearing compound like  $\text{SF}_6$ ,  $\text{CF}_4$ ,  $\text{NF}_3$  and  $\text{CCl}_2\text{F}_2$ . ( col.9 lines 15-25).

With respect to claims 14-16 wherein the deposition species comprises a silane bearing gas, silicon bearing species like  $\text{SiH}_4$ ,  $\text{Si}_x\text{Cl}_x\text{H}_2$  and  $\text{SiCl}_x$ . ( Sato Example 8 col. 20 lines 1-2).

With respect to claim 17, wherein the non uniform surface is cleaved by Smart Cut or an ELTRAN process ( Sato col. 4 line 62).


With respect to claim 18, wherein the defects are called HF defects.

It is noted for the records that while an applicant may his/her own lexicographer, patentability of claims is determined by whether similar structures/methods are described by the prior art and not what they the structure/method are called.

As stated above, Sato describes similar defects for same purpose therefore irrespective of applicants' nomenclature , the prior art discloses similar defects therefore the defects are obvious in view of Sato.


Any inquiry concerning this communication or earlier communication from the examiner should be directed to Steven H. Rao whose telephone number is (703) 306-5945. The examiner can normally be reached on Monday- Friday from approximately 7:00 a.m. to 4:30 p.m.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956. The Group facsimile number is (703) 308-7722.

  
Steven H. Rao

Patent Examiner

February 19, 2002.

  
OLIK CHAUDHURI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800